



Utility Patent Application

Attorney Docket No. Black & Decker 703

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Adam Ayala, PTO Reg. 38,373

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: **Dawei Dong**

Application No. **08/936,304**

Examiner: **Leon Scott, Jr.**

Filed: **September 24, 1997**

Group Art Unit: **2888**

Title: **Laser Level**

Assistant Commissioner for Patents
Washington, DC 20231

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APPEAL BRIEF

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In re Application of: **Dawei Dong**

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Filed: **September 24, 1997**

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Title: **Laser Level**

Assistant Commissioner for Patents
Washington, DC 20231

APPEAL BRIEF

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I. REAL PARTY INTEREST

The present application is assigned to Momentum Laser, Inc., which is a subsidiary of Black & Decker Inc.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

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III. STATUS OF CLAIMS

On July 23, 2002, appellant appealed from the final rejections of claims 6-13, which are the only pending claims in the application.

IV. STATUS OF AMENDMENTS

There are no amendments to the claims 6-13 subsequent to the final rejections.

V. SUMMARY OF INVENTION

Appellant's invention relates to a laser level system. Pursuant to 37 CFR § 1.192 and MPEP § 1206, appellant provides an explanation of the inventions defined in the claims involved in the appeal. For the sake of convenience, appellant refers the Board to columns and lines of the enclosed U.S. patent No. 5,754,582 to Dong (hereinafter "the '582 Patent"; attached hereto as Appendix B), which has the same specification as the present application except for the claims. However, the explanation only refers to the embodiments disclosed in the specification and does not discuss alternative mechanisms that would be covered by the claims. Accordingly, the following explanation should not be used to limit the scope of the claims.

Independent claim 6 recites a laser level system comprising a rotating shaft and a motor coupled to the shaft adapted to drive the shaft more than 360 degrees in a single direction. As shown in Figure 8, the '582 patent discloses a DC motor 14 having a rotating shaft 100 with a small pulley 20 fitted thereon. Col. 6, lines 51-52. The main pulley 24 is coupled to a small pulley 20 by means of a pulley belt 22. Col. 6, lines 46-47. The main pulley 24 in turn has a set

of upper magnets 25 secured thereto. Col. 6, line 43. The upper magnets 25 magnetically couple to the lower magnets 26, which are disposed on a free wheel 32. Col. 7, lines 1-13. The free wheel 32 is rigidly attached to a main shaft 37. Col. 6, lines 58-59. The main shaft 37 is part of the module housing 36 containing laser diode modules 38, 39. Col. 6, lines 27-31. With such arrangement, as DC motor 14 rotates, the small pulley 20 rotates the pulley belt 22, which drives the main pulley 24. The rotation of the main pulley 24 and the attractive force between the upper magnets 25 and lower magnets 26 will cause the free wheel 32 to rotate, which causes the main shaft 37, the module housing 36 and the laser diode modules 38, 39 to rotate until power to motor 14 is interrupted. Col. 7, lines 8-13. Until such power is interrupted, motor 14 will continue to rotate the small pulley 20 and ultimately the main shaft 37 and the module housing 36 well past 360 degrees to generate a level plane of reference light. Col. 9, lines 23-26.

Independent claim 6 also includes a case 2 rotatably supporting the rotating shaft 37 as shown in Figure 8. As shown in Figure 5, a representative laser diode 156 has a mechanical axis M1, which is not coincident with the center ray of the laser beam 150 emitted along the optical axis 150. Claim 6 also includes a module housing 36 attached to the rotating shaft 37, the module housing 36 having a mechanical axis, indicated by the cross in the center of cylindrical hole 91 and containing a laser diode 38 projecting a beam having a center ray 85 as shown in Figures 6-7, wherein the mechanical axis and the center ray of the beam 85 are not coincident with respect to each other as discussed earlier, but define a reference plane, which is perpendicular to the rotating shaft 37.

Dependent claim 7 recites the laser level system of claim 6, wherein the module housing 36 extends from the rotating shaft 37 as shown in Figure 7, and defines a hole 91 with a center axis which contains the laser diode 38, wherein the laser diode has a mechanical axis aligned with the center axis and an optical axis not aligned with the center axis, wherein the center axis and the optical axis are perpendicular to the rotating shaft 37.

Dependent claim 8 recites the laser level system of claim 6, wherein the module housing 36 extends from the rotating shaft 37 as shown in Figure 7, defines a hole 91 with a center axis which contains the laser diode 38 projecting a non-collimated beam as illustrated by Figure 4 along an optical axis non-coincident with the center axis, wherein the center axis and the optical axis are perpendicular to the rotating shaft 37.

Dependent claim 9 recites the laser level system of claim 6, wherein the module housing 36 extends from the rotating shaft 37, defines a hole 91 with a center axis which contains the laser diode 38 projecting the center ray non-coincident with the center axis, wherein the laser diode is rotated in the hole such that the center axis and the center ray are perpendicular to the rotating shaft. The present invention shows how this can be accomplished in Figure 6-7 and in accompanying specification from col. 4, line 65 to col. 6, line 10. In short, the laser diode 38 is rotated within the cylindrical hole 91 in the module housing 36 until the laser beam 85 impinges on the horizontal reference line, which is perpendicular to the axis of the rotating shaft 37 as shown in Figures 6-7.

Dependent claim 10 recites the laser level system of claim 6, further comprising a battery 12 shown in Figure 8 powering the laser diode. Col. 7, lines 52-56.

Independent claim 11 recites a laser level system comprising a shaft 37, a motor 14 coupled to rotate the shaft 37, and a case 2 rotatably supporting the rotating shaft 37; and a module housing 36 extending from the shaft 37 and containing a laser diode 38 for projecting a laser beam 85 to produce a reference plane as shown in Figure 8. Independent claim 11 also provides that the laser diode 38 is rotated in a single movement about a line perpendicular with the shaft 37 until the reference plane defined by the laser beam 85 is perpendicular with the rotating shaft 37.

Dependent claim 12 recites the laser level system of claim 11, wherein the laser diode 38 has a mechanical axis and a laser beam axis and wherein the laser diode 38 is rotated about the mechanical axis as discussed in connection with claim 6.

Independent claim 13 recites a laser level system for producing a level 360 degree reference plane. When in plane mode, the laser level provides a 360 degree reference plane. Abstract lines 12-13. Claim 13 comprises a rotating shaft 37, a motor 14 coupled to the shaft 37 adapted to rotatably drive the shaft 37, a case 2 rotatably supporting the shaft 37, and a module housing 36 attached to the rotating shaft 37, the module housing 36 containing a first laser diode 38 for projecting a first beam having a first center ray and a second laser diode 39 for projecting a second beam having a second center ray, wherein the first and second center rays are perpendicular to the rotating shaft 37, and the shaft 37 being rotated so that the first and second laser diodes 38, 39 produce the level 360 degree reference plane.

VI. ISSUES

A. Whether the subject matter of claims 6-13 was properly described in the specification in order to meet the “written description” requirement under 35 USC § 112, first paragraph.

B. Whether claims 6-13 are indefinite under 35 USC § 112, second paragraph, for failing to particularly point and distinctly claim the subject matter which applicant regards as the invention.

C. Whether the doctrine of obvious-type double patenting renders claim 6 and claim 11 unpatentable over claim 3 of U.S. Patent No. 5,754,582.

VII. GROUPING OF CLAIMS

A. For the rejections under 35 USC §112, first paragraph, claims 6-10 stand together as Group I, claims 11-12 stand together as Group II, and claim 13 stands alone as Group III.

B. For the rejections under 35 USC §112, second paragraph, claims 6-10 stand together as Group I, claims 11-12 stand together as Group II, and claim 13 stands alone as Group III.

C. For the rejections under the doctrine of obvious-type double patenting, claims 6 and 11 stand together.

VIII. ARGUMENT**A. Claims 6-13 Contain Only Subject Matter Described In the Specification Under 35 U.S.C. § 112, First Paragraph.**

The Board should reverse the Examiner's improper final rejection of Claims 6-13 under 35 USC § 112, first paragraph as the subject matter of Claims 6-13 is properly described in the specification in such a manner to allow persons of ordinary skill in the art to recognize that Applicant/Appellant invented what is claimed. Therefore, the Examiner's rejection was improper and should be reversed.

As mentioned above, claims 6-13 are grouped in three separate groups. First, claims 6-10 stand together as Group I. This is because these claims call for "a motor coupled to the shaft adapted to drive the shaft more than 360 degrees in a single direction," which is not explicitly claimed in the other claims.

Claims 11-12 stand together as Group II, as they are separately patentable over the other claims. This is because claim 11 calls for "the laser diode [being] rotated in a single movement about a line perpendicular with the shaft until the reference plane is perpendicular with the rotating shaft", which is not explicitly claimed in the other claims.

Finally, claim 13 stands alone as Group III, as it is separately patentable over the other claims. This is because claim 13 calls for "the shaft being rotated so that the first and second laser diodes produce the level 360 degree reference plane," which is not explicitly claimed in the other claims.

1. The Subject Matter of Claims 6-10 is Properly Described in the Specification.

The Board should reverse the Examiner's final rejection of Claims 6-10 as the subject matter claimed therein is properly described and supported by the specification.

Claim 6 calls for a laser level system, comprising a rotating shaft, a motor coupled to the shaft adapted to drive the shaft more than 360 degrees in a single direction, a case rotatably supporting the rotating shaft, and a module housing attached to the rotating shaft, the module housing having a mechanical axis and containing a laser diode projecting a beam having a center ray, wherein the mechanical axis and the center ray of the beam are not coincident with respect to each other but define a reference plane, which is perpendicular to the rotating shaft.

The Examiner has alleged that no written description exists in the specification for the claimed element that the motor be "adapted to drive the shaft more than 360 degrees in a single direction" in lines 3-4 of claim 6. Accordingly, the Examiner asserts this recitation is new matter.

According to the Federal Circuit, the standard for determining compliance with the written description requirement is "does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed." *In re Gosteli*, 872 F.2d 1008, 1012 (Fed. Cir.1989) (*quoted by* MPEP § 2163.02, at 2100-167 (8th ed., Aug. 2001)). The "subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement." MPEP § 2163.02.

For the sake of convenience, Applicant/Appellant refers the Board to "the '582 Patent, the parent to the present application, which has the same specification. Accordingly, all specification

cites below refer to the '582 Patent. Furthermore, Applicant/Appellant refers to a copy of the previously-filed declaration of Mr. Jerry Teng (hereinafter "Teng Declaration"; attached hereto as Appendix C), a former Black & Decker engineer with significant experience in the laser level field, who is a person of ordinary skill in the art.

The '582 Patent discloses a DC motor 14 having a shaft 100 with a pulley 20 fitted thereon. '582 Patent Spec., col, 6, lns. 51-52; Teng Declaration, para. 6. The pulley 20 is coupled to a pulley 24 via a pulley belt 22. '582 Patent Spec., col, 6, lns. 46-47; Teng Declaration, para. 6. The pulley 24 in turn has a set of magnets 25 secured thereto. '582 Patent Spec., col, 6, ln. 43; Teng Declaration, para. 6. These magnets 25 magnetically couple to magnets 26, which are disposed free wheel 32. '582 Patent Spec., col, 7, lns. 1 & 4-7; Teng Declaration, para. 6. Free wheel 32 is rigidly attached to shaft 37. '582 Patent Spec., col, 6, lns. 58-59; Teng Declaration, para. 6. Shaft 37 is part of the module housing 36 carrying laser diode modules 38, 39. '582 Patent Spec., col, 6, lns. 27-31; Teng Declaration, para. 6.

With such arrangement, as DC motor 14 rotates, the pulley 20 rotates the pulley belt 22, which drives the pulley 24. The rotation of the pulley 24 and the attractive force between the magnets 25, 26 will cause the free wheel 32 to rotate, which causes the shaft 37, module housing 36 and laser diode modules 38, 39 to rotate until power to motor 14 is interrupted. '582 Patent Spec., col, 7, lns. 8-13; Teng Declaration, para. 7. Until such power is interrupted, motor 14 will cause continue to rotate pulley 20 and ultimately shaft 37 and module housing 36 well past 360° to generate a level plane of reference light. See '582 Patent Spec., col, 9, lns. 23-26; Teng

Declaration, para. 8. When in plane mode, the laser level accordingly provides “a level 360 degree reference plane.” ‘582 Patent Abstract, lns. 11-12; Teng Declaration, para. 8.

In other words, the specification provides support for the claimed element that the motor is “adapted to drive the shaft more than 360 degrees in a single direction.” Such reading is confirmed by Mr. Teng, a person of ordinary skill in the art. Accordingly, the written description requirement has been met as to Claim 6 and its dependent claims. Therefore, Applicant/Appellant requests that the Board reverse the Examiner’s improper rejection of claims 6-10.

Rather than detailing a counter-argument as to why the specification does not show proper support, the Examiner just ignored such support in the specification and demanded that Applicant/Appellant “point out where in the specification *support* for this exact recitation can be found.” Final Office Action, p. 6 (emphasis in original). Again, “the subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement.” MPEP § 2163.02. Therefore, the Examiner’s requirement that the Applicant/Appellant point out the exact recitation is incorrect.

In addition, the Examiner dismisses the Teng Declaration because “a declaration/affidavit cannot be used to argue or interpret the claim language and/or the specification where the recitation is to a precise or specific limitation not subject to interpretation.” The Examiner however provides no legal support for his position. This is not surprising as the Board has held that “[o]pinion testimony which purports to state that a particular feature or limitation of a claim ... is disclosed in an application ... may be helpful and can be admitted.” *Glaser v. Strickland*,

220 USPQ 446 (Bd. Pat. Int. 1983). In the present case, the Teng Declaration is evidence of how a person of ordinary skill would interpret the sufficiency of the specification in supporting the claim elements now in dispute, showing again, they are subject to interpretation, and provides a factual basis for his opinion. Accordingly, the *Glaser* standard applies and should thus be considered as evidence supporting Applicant/Appellant's analysis.

2. The Subject Matter of Claims 11-12 is Properly Described in the Specification.

The Board should reverse the Examiner's final rejection of claims 11-12 as the subject matter claimed therein is properly described and supported by the specification.

Claim 11 calls for a laser level system, comprising a shaft, a motor coupled to rotate the shaft, a case rotatably supporting the rotating shaft, and a module housing extending from the shaft and containing a laser diode for projecting a laser beam to produce a reference plane, wherein the laser diode is rotated in a single movement about a line perpendicular with the shaft until the reference plane is perpendicular with the rotating shaft.

In particular, the Examiner wrote "In order for the laser diode to be: rotated in a single movement about a line perpendicular with the shaft until the reference plane is perpendicular with the rotating plane implies that the motor coupled to the rotate the shaft and thereby the laser diode in the housing extending from the shaft would have to drive the shaft more than 360 degrees in a single direction." The Examiner accordingly considers the claimed recitation that the "laser diode is rotated in a single movement about a liner perpendicular with the shaft until

the reference plane is perpendicular with the rotating plane” as new matter and has requested Applicant for the support in the specification.

Contrary to the Examiner’s interpretation, claim 11 does not require that the motor drive the shaft more than 360 degrees. Instead, the objected recitation relates to a method of alignment in which the laser diode is rotated until the reference plane is perpendicular to the shaft. See, e.g., Figures 4-7 and the ‘582 Patent, col. 4, line 65 through col. 6, line 10, which support this limitation. In particular, referring to Figures 6-7, the laser diode 38 can be rotated in a single movement about a line perpendicular with the shaft 37 in the cylindrical hole 91 in the module housing 36 until by rotation of the laser diode 38 the laser beam 85 from the laser diode 38 impinges on the horizontal reference line on a target showing the reference plane is perpendicular with the rotating shaft.

Accordingly, the written description requirement has been met as to Claim 11 and its dependent claim. Therefore, Applicant/Appellant requests that the Board reverse the Examiner’s improper rejection of claims 11-12.

3. The Subject Matter of Claim 13 is Properly Described in the Specification.

The Board should reverse the Examiner’s final rejection of Claim 13 as the subject matter claimed therein is properly described and supported by the specification.

Claim 13 calls for a laser level system for producing a level 360 degree reference plane, comprising a rotating shaft, a motor coupled to the shaft adapted to rotatably drive the shaft, a case rotatably supporting the shaft, and a module housing attached to the rotating shaft, the

module housing containing a first laser diode for projecting a first beam having a first center ray and a second laser diode for projecting a second beam having a second center ray, wherein the first and second center rays are perpendicular to the rotating shaft, and the shaft being rotated so that the first and second laser diodes produce the level 360 degree reference plane.

In particular, the Examiner objected to the claimed recitation ‘the shaft being rotated so that the first and second laser diodes produce the level 360 degree reference plane’ as containing new subject matter.

According to the Federal Circuit, the standard for determining compliance with the written description requirement is “does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed.” *Gosteli*, 872 F.2d at 1012. The “subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement.” MPEP § 2163.02.

As discussed above in Section VIII.A.1, as DC motor 14 rotates, the pulley 20 rotates the pulley belt 22, which drives the pulley 24. The rotation of the pulley 24 and the attractive force between the magnets 25, 26 will cause the free wheel 32 to rotate, which causes the main shaft 37, module housing 36 and laser diode modules 38, 39 to rotate until power to motor 14 is interrupted. ‘582 Patent Spec., col, 7, lns. 8-13; Teng Declaration, para. 11. Accordingly, the laser level will generate a level plane of reference light. See ‘582 Patent Spec., col, 9, lns. 23-26; Teng Declaration, para. 11. When in plane mode, the laser level accordingly provides “a level 360 degree reference plane.” ‘582 Patent Abstract, lns. 11-12; Teng Declaration, para. 11. Because support for the claimed recitation is found in the specification, as confirmed by Mr.

Teng, no new matter exists in Claim 13. Accordingly, the written description requirement has been met as to Claim 13. Therefore, the Board should reverse the Examiner's improper rejection of Claim 13.

The Examiner has ignored such support in the specification and demanded that Applicant/Appellant "point out where in the specification *support* for this exact recitation can be found." Final Office Action, p. 7 (emphasis in original). Again, "the subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement." MPEP § 2163.02. Therefore, the Examiner's requirement that the Applicant/Appellant point out the exact recitation is incorrect.

In addition, the Examiner dismisses the Teng Declaration because "a declaration/affidavit cannot be used to argue or interpret the claim language and/or the specification where the recitation is to a precise or specific limitation not subject to interpretation." The Examiner however provides no legal support for his position. Again, this is not surprising as the Board has held that "[o]pinion testimony which purports to state that a particular feature or limitation of a claim ... is disclosed in an application ... may be helpful and can be admitted." *Glaser*, 220 USPQ 446. In the present case, the Teng Declaration is evidence of how a person of ordinary skill would interpret the sufficiency of the specification in supporting the claim elements now in dispute, showing again, they are subject to interpretation, and provides a factual basis for his opinion. Accordingly, the *Glaser* standard applies and should thus be considered as evidence supporting Applicant/Appellant's analysis.

B. Claims 6-13 are Definite Under 35 USC § 112, Second Paragraph.

The Board should reverse the Examiner's improper rejection of claims 6-13 under 35 USC § 112, second paragraph, as the claims apprise one of ordinary skill in the art of their scope. Therefore, the Examiner's rejection was improper and should be reversed.

As mentioned above, claims 6-13 are grouped in three separate groups. First, claims 6-10 stand together as Group I. This is because these claims call for "a motor coupled to the shaft adapted to drive the shaft more than 360 degree in a single direction," which is not explicitly claimed in the other claims. Furthermore, the Examiner has raised an indefiniteness argument as to claim 6 different from those raised for claims 11 and 13.

Claims 11-12 stand together as Group II, as they are separately patentable over the other claims. This is because claim 11 calls for "the laser diode [being] rotated in a single movement about a line perpendicular with the shaft until the reference plane is perpendicular with the rotating shaft", which is not explicitly claimed in the other claims. Furthermore, the Examiner has raised an indefiniteness argument as to claim 11 different from those raised for claims 6 and 13.

Finally, claim 13 stands alone as Group III, as it is separately patentable over the other claims. This is because claim 13 calls for "the shaft being rotated so that the first and second laser diodes produce the level 360 degree reference plane," which is not explicitly claimed in the other claims. Furthermore, the Examiner has raised an indefiniteness argument as to claim 13 different from those raised for claims 6 and 11.

1. Claims 6-10 are Clear and Definite.

The Examiner improperly rejected claims 6-10 for three reasons. First, the Examiner alleged that claim 6 is indefinite because no connective relationship exists between the preamble and the elements claimed in the claim body. Second, the Examiner alleged that it is unclear how the motor is adapted to drive the shaft more than 360 degrees in a single direction. Finally, the Examiner alleged that a person of ordinary skill would not understand the meaning of the phrase “more than 360 degrees.” Applicant/Appellant addresses each argument below.

In particular, the Examiner alleged that the word "level" in the preamble allegedly renders claim 6-10 indefinite and incomplete under 35 USC § 112, second paragraph, since no "connective relationships" have been recited between the laser level system recited in the preamble and the system components in the body. This rejection should be reversed as no such legal requirement exists.

Admittedly, a claim which fails to interrelate essential elements of the invention may be rejected under 35 USC § 112, second paragraph. MPEP § 2172.01 (*citing In re Venezia*, 189 USPQ 149 (CCPA 1976); *In re Collier*, 158 USPQ 266 (CCPA 1968)). In other words, if the body of the claim calls for interrelated elements, the § 112 requirement has been met. Thus, a connective relationship is not required between the preamble and the elements claimed in the claim body.

Furthermore, in the present case, all elements claimed in the body of independent claim 6 are interrelated to the “rotating shaft.” Therefore, the § 112 requirement has been met for claim 6 and its dependent claims.

The Examiner also alleged that claim 6 was indefinite “[s]ince no disclosure exist [sic] to support the recitation in line 3 of claim 6, it is not clear within the context of claim language [sic] how the motor is *adapted* to drive the shaft more than 360 degrees in a single direction.”

(Emphasis in original.)

It appears that the Examiner has confused the written description requirement of § 112, first paragraph, with the definiteness requirement of § 112, second paragraph, as the definiteness does not require support in the specification for specific recitations. (Nevertheless, the Board is referred to Section VIII.A.1 for the discussion on support for the specific recitation.) Instead, “[t]he legal standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope.” *In re Warmerdam*, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994).

As shown in the Appendix, claim 6 calls for “a motor coupled to the shaft adapted to drive the shaft more than 360 degrees in a single direction.” By reading this claim, a person skilled in the art will be able to easily determine that claim 6 requires the motor to be coupled to the shaft for driving the shaft more than 360 degrees. The meaning of the words is plain and clear. Thus, claim 6 is definite.

Applicant/Appellant also notes that the Examiner has not offered any other alternatives that may be clearer than the objected language. In Applicant/Appellant’s response prior to the Final Office Action, Applicant/Appellant reminded the Examiner that “Examiners are encouraged to suggest claim language to applicants to improve the clarity or precision of the language used” under MPEP § 2173.02, and invited “the Examiner to provide any suggestions for improving the clarity or precision of the language used.” The Examiner however failed to do so.

Applicant/Appellant suggests that the Examiner could not provide any alternatives more precise or clearer than the objected language as the objected language is very clear.

Finally, the Examiner also alleged that claim 6 was indefinite because it calls for driving the shaft “more than 360 degrees” and it is unclear “how much is more and how does one of ordinary skill determine this *undefined quantity*?” In other words, the Examiner alleges claim 6 is indefinite because a person skilled in the art would not know when a rotation is more than 360 degrees.

According to the Federal Circuit, “[t]he legal standard for definiteness is whether a claim reasonably appraises those of skill in the art of its scope.” *In re Warmerdam*, 31 USPQ2d at 1759. As shown in the Appendix, claim 6 calls for “a motor coupled to the shaft adapted to drive the shaft more than 360 degrees in a single direction.” By reading this claim, a person skilled in the art will be able to easily determine that claim 6 requires the motor to be coupled to the shaft for driving the shaft more than 360 degrees.

The meaning of the words is plain and clear. Does rotating the shaft less than 360 degrees infringe claim 6? No, because that is not more than 360 degrees. Does rotating the shaft 720 degrees infringe claim 6? Yes, because that is more than 360 degrees. Accordingly, claim 6 reasonably appraises those of skill in the art of its scope. Thus, claim 6 is definite.

Because claim 6 is easily understood by the person skilled in the art, the Examiner’s final rejection of claim 6 and its dependent claims under 35 USC § 112, second paragraph, is improper. Applicant/Appellant urges the Board to reverse the Examiner’s final rejection accordingly.

2. Claims 11-12 are Clear and Definite.

The Examiner improperly rejected claims 11-12 for two reasons. First, the Examiner alleged that claim 11 is indefinite because no connective relationship exists between the preamble and the elements claimed in the claim body. Second, the Examiner alleged that it is unclear how the laser diode contained in the housing connected to the shaft is rotated in a single direction to produce the reference plane. Applicant/Appellant addresses each argument below.

In particular, the Examiner alleged that the word "level" in the preamble allegedly renders claim 11-12 indefinite and incomplete under 35 USC § 112, second paragraph, since no "connective relationships" have been recited between the laser level system recited in the preamble and the system components in the body. This rejection should be reversed as no such legal requirement exists.

Admittedly, a claim which fails to interrelate essential elements of the invention may be rejected under 35 USC § 112, second paragraph. MPEP § 2172.01 (*citing In re Venezia*, 189 USPQ 149 (CCPA 1976); *In re Collier*, 158 USPQ 266 (CCPA 1968)). In other words, if the body of the claim calls for interrelated elements, the § 112 requirement has been met. Thus, a connective relationship is not required between the preamble and the elements claimed in the claim body.

Furthermore, in the present case, all elements claimed in the body of independent claim 11 are interrelated to the "rotating shaft." Therefore, the § 112 requirement has been met for claim 11 and its dependent claim.

The Examiner also alleged that claim 11 was indefinite as to "how is the laser diode contained in the housing connected to the shaft rotated in a single direction to produce the reference

plane?, [sic] does [sic] the shaft rotate the diode in increments\, [sic] or is this achieved in some undisclosed manner?”

As mentioned above, “[t]he legal standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope.” *Warmerdam*, 31 USPQ2d at 1759. As shown in the Appendix, claim 11 calls for “a motor coupled to rotate the shaft” and “a module housing extending from the shaft and containing a laser diode for projecting a laser beam to produce a reference plane.”

By reading this claim, a person skilled in the art will be able to easily determine that claim 11 requires that: (a) the shaft is rotated by the motor; (b) the laser diode is contained by the module housing; and (c) the laser diode projects a laser beam, producing a reference plane as the shaft is rotated. The meanings of the words are plain and clear. Accordingly, claim 11 apprises the person skilled in the art of its scope. Therefore, claim 11 is definite.

Furthermore, Applicant/Appellant does not understand why the Examiner asks about rotations in “a single direction” or whether such rotations occur in increments, as such language is not present in claim 11. Thus, the Examiner’s queries are irrelevant as to the issue of definiteness and should be ignored.

Because claim 11 is easily understood by the person skilled in the art, the Examiner’s final rejection of claim 11 and its dependent claim under 35 USC § 112, second paragraph, is improper. Applicant/Appellant urges the Board to reverse the Examiner’s final rejection accordingly.

3. Claims 13 is Clear and Definite.

The Examiner improperly rejected claims 13 for two reasons. First, the Examiner alleged that claim 13 is indefinite because no connective relationship exists between the preamble and the elements claimed in the claim body. Second, the Examiner alleged that it is unclear how the motor is adapted to drive the shaft so that the first and second laser diodes produce the level 360 degree reference plane. Applicant/Appellant addresses each argument below.

In particular, the Examiner alleged that the word "level" in the preamble allegedly renders claim 13 indefinite and incomplete under 35 USC § 112, second paragraph, since no "connective relationships" have been recited between the laser level system recited in the preamble and the system components in the body. This rejection should be reversed as no such legal requirement exists.

Admittedly, a claim which fails to interrelate essential elements of the invention may be rejected under 35 USC § 112, second paragraph. MPEP § 2172.01 (*citing In re Venezia*, 189 USPQ 149 (CCPA 1976); *In re Collier*, 158 USPQ 266 (CCPA 1968)). In other words, if the body of the claim calls for interrelated elements, the § 112 requirement has been met. Thus, a connective relationship is not required between the preamble and the elements claimed in the claim body.

Furthermore, in the present case, all elements claimed in the body of independent claim 13 are ultimately interrelated to the "rotating shaft." Therefore, the § 112 requirement has been met for claim 13 and its dependent claims.

The Examiner also alleged that claim 13 was indefinite as to "how is the motor *adapted* to drive the shaft so that the first and second laser diodes produce the level 360 degree reference

plane; clearly to produce a 360 degree reference plane some type of stop mechanism or control must be employed to stop the rotation at 360 degree [sic]" (Emphasis in original.)

Once again, it appears that the Examiner has confused the written description requirement of § 112, first paragraph, with the definiteness requirement of § 112, second paragraph, as the definiteness does not require support in the specification for specific recitations. (Nevertheless, the Board is referred to Section VIII.A.3 for the discussion on how the motor drives the shaft to produce the 360 degree reference plane.)

Instead, "[t]he legal standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope." *In re Warmerdam*, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). As shown in the Appendix, claim 13 calls for "a motor coupled to the shaft adapted to rotatably drive the shaft" and "a module housing attached to the rotating shaft, the module housing containing a first laser diode for projecting a first beam ... and a second laser diode for projecting a second beam ... and the shaft being rotated so that the first and second laser diodes produce the level 360 degree reference plane." By reading this claim, a person skilled in the art will be able to easily determine that claim 13 requires that: (a) the shaft is rotated by the motor; (b) the laser diodes are contained by the module housing, which is attached to the shaft; and (c) the laser diodes project laser beams, which produce a reference plane as the shaft is rotated. The meanings of the words are plain and clear. Accordingly, claim 13 apprises the person skilled in the art of its scope. Therefore, claim 13 is definite.

Furthermore, Applicant/Appellant does not understand why the Examiner asks about a stop mechanism, where none is claimed or disclosed. A person skilled in the art will recognize that,

even if the laser diodes and shaft are rotated 720 degrees, the user will only see a 360 degree reference plane. Therefore, the Examiner's queries are irrelevant as to the issue of definiteness and should be ignored.

Because claim 13 is easily understood by the person skilled in the art, the Examiner's final rejection of claim 13 under 35 USC § 112, second paragraph, is improper. Applicant/Appellant urges the Board to reverse the Examiner's final rejection accordingly.

**C. The Double Patenting Rejection is Moot
as Applicant/Appellant Concedes This Issue.**

The double patenting rejection is moot as Applicant/Appellant concedes this issue. Accordingly, Applicant/Appellant agrees to file a terminal disclaimer if and when the present application is allowed. Therefore, this rejection should be laid aside as moot.

IX. APPENDICES

Several appendices are hereby attached. These are: (1) Appendix A, which contains a copy of the claims involved in the appeal; (2) Appendix B, which is a copy of U.S. Patent No. 5,754,582; and (3) Appendix C, which is a copy of the Declaration of Jerry Y. Teng filed previously in the present case.



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X. CONCLUSION

Based on the foregoing, Applicant/appellant urges the Board to reverse the Examiner's final rejection of claims 6-13 under 35 USC § 112, second paragraph. Similarly, Applicant/appellant urges the Board to reverse the Examiner's final rejection of claims 6-13 under 35 USC § 112, first paragraph. Furthermore, Applicant/appellant urges the Board to recommend allowance of claims 6-13. Finally, the Board should lay aside the double patenting rejection as moot.

Respectfully submitted,

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Appendices